



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/905,971	08/05/1997	KAZUYUKI TOYODA	2342-0111P	6177
2292	7590	07/06/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ZERVIGON, RUDY	
			ART UNIT	PAPER NUMBER

1763

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/905,971

Applicant(s)

TOYODA ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☒ Claim(s) 35 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. In view of the appeal brief filed on April 29, 2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal and oral hearing therefore.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12 and 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant requires "said substrate transfer device" it is unclear if applicant refers to the first or second substrate transfer device.

Claim Objections

4. Applicant is advised that should claim 35 be found allowable, claim 36 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight

Art Unit: 1763

difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tateishi et al (U.S. Pat. 4,405,435) in view of Mikio Takagi (Pub. No. 2-152251; IDS Paper 6 Document).

Tateishi teaches:

- i. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63), comprising: a substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63); a module (Figure 7,8), a common first substrate transfer device (164; Figure 7), provided in said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), for transferring substrates (3) into the module (Figure 7,8), wherein the module (Figure 7,8) comprises: a substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63), having a hermetic (column 17, lines 34-60) structure, for processing said substrates (3); an intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) having a hermetic (column 17, lines 34-60) structure and provided between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63); a first valve (157; Figure 7) provided between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column

Art Unit: 1763

18, line 63) and said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63), said first valve (157; Figure 7) capable of establishing hermetic (column 17, lines 34-60) isolation between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and capable of allowing said substrates (3) to pass there through when opened; and a second valve (156; Figure 7) provided between said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) and said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), said second valve (156; Figure 7) capable of establishing hermetic (column 17, lines 34-60) isolation between said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) and said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and capable of allowing said substrates (3) to pass there through when opened, and wherein said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) is provided with a second substrate transfer device (179, 178; Figure 7,8) for transferring said substrates (3) to and from said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) – claim 1

- ii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein Tateishi's module includes said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) has a hermetic (column 17, lines 34-60) structure of vacuum level for processing said substrates (3) ; said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) has a

Art Unit: 1763

hermetic (column 17, lines 34-60) structure of vacuum level; said first valve (157; Figure 7) is capable of establishing hermetic (column 17, lines 34-60) isolation of vacuum level between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and is capable of allowing said substrates (3) to pass there through when opened; and said second valve (156; Figure 7) is capable of establishing hermetic (column 17, lines 34-60) isolation of vacuum level between said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) and said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and is capable of allowing said substrates (3) to pass there through when opened – claim 2

- iii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 2, wherein said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) can be independently reduced in pressure (176, 188, 175, 187; Figure 7; column 17, lines 40-65) – claim 3
- iv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with a substrate holding device (183, 184, 180, 181; Figure 7,8) capable of holding said substrates (3) , said substrate holding device (183, 184, 180, 181; Figure 7,8) being positioned closer (during “conveying”) to

Art Unit: 1763

said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63)
than said second substrate transfer device (179, 178; Figure 7,8) – claim 4

- v. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) transfers said substrates (3) under atmospheric pressure – Applicant's claim 5 limitation of "under atmospheric pressure" is a claim requirement of intended use. It is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ." (emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- vi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 5, wherein said substrates (3) are processed under a reduced pressure (column 17, lines 34-60) in said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) – claim 6
- vii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with a cassette (162; Figure 7) holding

Art Unit: 1763

device (164; Figure 7) for holding a cassette (162; Figure 7) capable of accommodating a plurality of said substrates (3), said first substrate transfer device (164; Figure 7) being capable of transferring said substrates (3) – claim 7

- viii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 7, wherein said first substrate transfer device (164; Figure 7) is provided with a structure capable of transferring said cassette – claim 8
- ix. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with an elevator (169; Figure 7) capable of vertically moving said first substrate transfer device (164; Figure 7) – claim 9
- x. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 9, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with a cassette introducing section (163; Figure 7) for transferring said cassette (162; Figure 7) into said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) and carrying out said cassette (162; Figure 7) from said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), said cassette introducing section (163; Figure 7) being disposed at a predetermined height which is different from the height of said cassette (162; Figure 7) holding device (164; Figure 7) – claim 10
- xi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is capable of processing a plurality of said substrates (3)

Art Unit: 1763

simultaneously, and said second substrate transfer device (179, 178; Figure 7,8) is capable of transferring simultaneously the same number of substrates (3) as said plurality of substrates (3) to be simultaneously processed by said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) – claim 11

xii. A substrate processing apparatus as recited in claim 11, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is a plasma (“sputtering chamber 154”) enhanced processing apparatus for processing said substrates (3) utilizing plasma (“sputtering chamber 154”), and includes a second substrate holding device (87, 88; Figure 7) capable of holding said plurality of substrates (3) with the substrates (3) being laterally arranged side by side, and wherein said substrate transfer device is capable of transferring simultaneously said plurality of substrates (3) laterally arranged side by side – claim 12

xiii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is capable of processing a plurality of said substrates (3) simultaneously, and said second substrate transfer means (179, 178; Figure 7,8) is capable of transferring said plurality of substrates (3) one by one to respective their processing positions where said plurality of substrates (3) are to be simultaneously processed – claim 13

xiv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63), comprising: a substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63); a module (Figure 7,8), and a common first substrate transfer device (164;

Art Unit: 1763

Figure 7), provided in said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), for transferring substrates (3), the module having a substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63), having a hermetic (column 17, lines 34-60) structure, for processing said substrates (3); first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) provided between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), having a hermetic (column 17, lines 34-60) structure; a first valve (157; Figure 7) provided between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63), said first valve (157; Figure 7) capable of establishing hermetic (column 17, lines 34-60) isolation between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and capable of allowing said substrates (3) to pass there through when opened; a second valve (156; Figure 7) said second valve (156; Figure 7) capable of establishing hermetic (column 17, lines 34-60) isolation for a first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63); and wherein said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) is provided with a second substrate transfer device (179, 178; Figure 7,8) capable of transferring said substrates (3) between said substrate holding device (183, 184, 180,

Art Unit: 1763

- 181; Figure 7,8) and said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) – claim 14
- xv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein, the module contains: said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) has a hermetic (column 17, lines 34-60) structure of vacuum level for processing said substrates (3); said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) each have a hermetic (column 17, lines 34-60) structure of vacuum level; said first valve (157; Figure 7) is capable of establishing hermetic (column 17, lines 34-60) isolation of vacuum level between said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63) and said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and is capable of allowing said substrates (3) to pass there through when opened; said second valve (156; Figure 7) is capable of establishing hermetic (column 17, lines 34-60) isolation of vacuum level of the first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) when closed, and is capable of allowing said substrates (3) to pass there through when opened – claim 15
- xvi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 15, wherein said substrate processing chamber (154; Figure 7,8; Column 17, line 7 - column 18, line 63), said first intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63) can be independently reduced in pressure (176, 188, 175, 187; Figure 7; column 17, lines 40-65) – claim 16

Art Unit: 1763

- xvii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) transfers said substrates (3) under atmospheric pressure – Applicant's claim 17 limitation of "under atmospheric pressure" is a claim requirement of intended use. It is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ." (emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Exparte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- xviii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 17, wherein said substrates (3) are processed under a reduced pressure (column 17, lines 34-60) in said substrate processing section – claim 18
- xix. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate holding device (183, 184, 180, 181; Figure 7,8) is a heat-resistant (182; Figure 7) substrate holding device (183, 184, 180, 181; Figure 7,8) – claim 19
- xx. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate transfer section (152; Figure 7,8; Column 17,

Art Unit: 1763

line 7 - column 18, line 63) is further provided with a cassette (162; Figure 7) holding device (164; Figure 7) for holding a cassette (162; Figure 7) capable of accommodating a plurality of said substrates (3) , said first substrate transfer device (164; Figure 7) being capable of transferring said substrate or said substrates (3) between said cassette (162; Figure 7) held by said cassette (162; Figure 7) holding device (164; Figure 7) and module – claim 20

- xxi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 20, wherein said first substrate transfer device (164; Figure 7) is provided with a structure capable of transferring said cassette – claim 21
- xxii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with an elevator (169; Figure 7) capable of vertically moving said first substrate transfer device (164; Figure 7) – claim 22
- xxiii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 22, wherein said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) is further provided with a cassette introducing section (163; Figure 7) for transferring said cassette (162; Figure 7) into said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) and carrying out said cassette (162; Figure 7) from said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), said cassette introducing section (163; Figure 7) being disposed at a predetermined height which is different from the height of said cassette (162; Figure 7) holding device (164; Figure 7) – claim 23

Art Unit: 1763

- xxiv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is capable of processing a plurality of said substrates (3) simultaneously, and said second substrate transfer device (179, 178; Figure 7,8) is capable of transferring simultaneously the same number of substrates (3) as said plurality of substrates (3) to be simultaneously processed by said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) – claim 24
- xxv. A processing apparatus as recited in claim 24, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is a plasma (“sputtering chamber 154”) enhanced processing apparatus for processing said substrates (3) utilizing plasma (“sputtering chamber 154”), and includes a second substrate holding device (87, 88; Figure 7) capable of holding said plurality of substrates (3) with the substrates (3) being laterally arranged side by side, and wherein said substrate transfer device (87, 88; Figure 7 – assuming “second substrate holding device”) is capable of transferring simultaneously said plurality of substrates (3) laterally arranged side by side – claim 25
- xxvi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein said substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) is capable of processing a plurality of said substrates (3) simultaneously, and said second substrate transfer device (179, 178; Figure 7,8) is capable of transferring said plurality of substrates (3) one by one to respective their processing positions where said plurality of substrates (3) are to be simultaneously processed – claim 26

Art Unit: 1763

- xxvii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein the apparatus is configured to transfer and process a single substrate at a time – claim 27. It is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- xxviii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein the apparatus is configured to transfer a single substrate and to process a plurality of substrates (3) at a time – claim 28. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Art Unit: 1763

- xxix. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein the apparatus is configured to transfer a plurality of substrates (3) and to process a single substrate at a time – claim 29. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ." (emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- xxx. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein the apparatus is configured to transfer and process a single substrate at a time – claim 30. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ." (emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Art Unit: 1763

- xxxi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein the apparatus is configured to transfer a single substrate and to process a plurality of substrates (3) at a time – claim 31. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- xxxii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein the apparatus is configured to transfer a plurality of substrates (3) and to process a single substrate at a time – claim 32. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

- xxxiii. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, wherein the apparatus is configured to transfer a plurality of substrate at a time and to process a plurality of substrate at a time – claim 33. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).
- xxxiv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 14, wherein the apparatus is configured to transfer a plurality of substrate at a time and to process a plurality of substrate at a time – claim 34. As above, it is well established that apparatus claims must be structurally distinguished from the prior art (In re Danley, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does ."(emphasis in original) Hewlett - Packard Co . v. Bausch & Lomb Inc ., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), MPEP – 2114). Further, a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Exparte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Art Unit: 1763

- xxxv. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, further including a plurality of cassette (162; Figure 7) holders (164, 165; Figure 7) disposed in said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), each for holding a cassette – claim 35
- xxxvi. A substrate processing apparatus (Figure 7,8; Column 17, line 7 - column 18, line 63) as recited in claim 1, further including a plurality of cassette (162; Figure 7) holders (164, 165; Figure 7) disposed in said substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63), each for holding a cassette – claim 36

Tateishi does not teach:

- i. plural modules where said plurality of modules being directly detachably attached to Tateishi's substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) - claim 1, 14, 20
- ii. said plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction such that said plurality of modules are capable of being attached to and detached from a wall of Tateishi's substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) independent of one another – claim 1
- iii. said plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction such that said plurality of modules are capable of being attached to and detached from Tateishi's substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) independent of one another, wherein said plurality of modules are piled up adjacent to, but spaced separately from one another in a substantially vertical direction such that said plurality of modules are capable of being

Art Unit: 1763

attached to and detached from a wall of Tateishi's substrate transfer section (152; Figure 7,8; Column 17, line 7 - column 18, line 63) independent of one another – claim 14

- iv. plural intermediate chambers (153; Figure 7,8; Column 17, line 7 - column 18, line 63) with a substrate holding device – claim 14, 16
- v. a third valve provided between said second intermediate chamber and said substrate transfer section – claim 14, 15

Mikio Takagi describes a manufacturing system of vertical-type semiconductor (title, JPO abstract). Specifically, Mikio Takagi describes "...a process chamber installed in each stage position of a space positioned in an up-and-down direction..." in order to "...reduce a floor area and to easily install more systems...". Thus the Mikio Takagi reference supports a substrate processing apparatus hermetically configured exhibiting modules piled up separately in a substantially vertical direction. Mikio Takagi additionally describes all component chambers each hermetically configured and can be independently reduced in pressure (abstract, "Individual process chambers are evacuated in advance to a prescribed pressure by using individual pumps 3"). Component chambers are each hermetically configured (certified STIC translation, page 5, second paragraph) and exhibit the following attributes:

- i. a substrate transfer section embodied by Mikio Takagi here as item 14, Figure 1, (certified STIC translation, page 12, 3rd paragraph)
- ii. a plurality of directly detachably (first paragraph, page 11) attached modules (items 14/2/3, Figure 1; certified STIC translation, pages 10-12) and a plurality of modules embodied by Mikio Takagi as processing or treatment chambers (items 2, Figure 1; certified STIC translation, pages 10-12) for processing substrates - The modules are

Art Unit: 1763

capable of being attached to and detached from the substrate transfer section (page 11, 1st paragraph)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to reproduce Tateishi's module (Figure 7), intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63), and corresponding isolation valves where the plurality of modules are piled up in a substantially vertical direction.

Motivation to reproduce Tateishi's module (Figure 7), intermediate chamber (153; Figure 7,8; Column 17, line 7 - column 18, line 63), and corresponding isolation valves where the plurality of modules are piled up in a substantially vertical direction is "To reduce a floor area and to easily install more systems ("...modules being detachable attached..." which is centered on reducing the clean room foot print in order to reduce operating costs ("Purpose" of IDS document abstract.) as taught by Mikio Takagi. Additionally, it has been held that reproduction of components is obvious (In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA1960), MPEP 2144.04).

Response to Arguments

7. Applicant's arguments, see Appeal Brief, filed April 29, 2004, with respect to the rejections of claims 1-4, 7-16, and 20-36 under 35 U.S.C. 103(a) as being unpatentable over Tateishi et al (U.S. Pat. 4,405,435) in view of Mikio Takagi (Pub. No. 2-152251; IDS Paper 6 Document) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection of claims 1-36 under 35 U.S.C. 103(a) as being unpatentable over Tateishi et al (U.S. Pat. 4,405,435) in view of Mikio Takagi (Pub. No. 2-152251; IDS Paper 6 Document). A new ground of rejection of claims

Art Unit: 1763

12 and 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official fax phone number for the 1763 art unit is (703) 872-9306. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (571) 272-1439.

Rudy Zervigon
7/1/4